UNITED STATES PATENT AND TRADEMARK OFFICE

C1C

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,265	09/16/2003	Edith Mathiowitz	19141-546 DIV3 CON2	1449

30623 7590 11/17/2005

MINTZ, LEVIN, COHN, FERRIS, GLOVSKY
AND POPEO, P.C.
ONE FINANCIAL CENTER
BOSTON, MA 02111

EXAMINER	
LEAVITT, MARIA GOMEZ	
ART UNIT	PAPER NUMBER
1633	

DATE MAILED: 11/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/663,265	MATHIOWITZ ET AL.	
	Examiner	Art Unit	
	Maria Leavitt	1633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 3-18 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 3-18 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Detailed Action

Claims 1-2 are cancelled by Applicant's amendment dated 04-08-2004 and claims 3-18 have replaced the cancelled claims. Claims 3-18 are still pending to which the following grounds of rejection are applicable.

Claim Rejecions

35 U.S.C. 112, 1st Paragraph, Description Requirement, Including New Matter Situations. MPEP 7.31.01

New claims 3 and 18 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a new matter rejection.

New claims 3 and 18 recite the limitation "the polymeric matrix is in a form selected from the group consisting of stents, coatings, slabs and films". This limitation does not appear to have written support from the as-filed Specification. The closest reference as to the way of casting the polymeric matrix is disclosed on p. 9, wherein the polymer may be cast as a thin slab or film, and also in the form of a coating or part of a stent or catheter, or vascular graft or other prostetic devices. Thus, the words of the as-filed application on p. 9 are the same as the ones in claims 3 and 18, however the context of use is different. The specification appears to describe a drug-eluting stent. The medical encyclopedia of Medline Plus defines a drug-eluting stent as " a tiny mesh tube coated with medication (sirolimus or paclitaxel) to help prevent re-blockage of

the coronary arteries (restenosis.) The stent is approved for use during angioplasty. It is left permanently in the artery, and slowly releases a drug that prevents the build-up of tissue that leads to restenosis". Hence, the limitation of new claims 3 and 18 is considered new matter.

New claims 3, dependent claims 4-14, and claims 15- 18 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a new matter rejection.

New claims 3, dependent claims 4-14, and claims 15-18 recite the limitation " system". The specification on page 8, lines 30-37, teaches a method for delivering naked DNA to a tissue using a preparation of microparticles between 0.5-100 μm comprising a solid polymeric matrix wherein the gene is dispersed within a solid polymeric matrix. However, the specification does not disclose other references in support of the broadly claimed "system". Thus the limitation of new claims 3, dependent claims 4-14, and claims 15-18 is considered new matter.

New claim 18 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a new matter rejection.

New claim 18 combines the limitations of using the effective amount of DNA, greater than 20 μg, which is dispersed within the polymeric matrix (i.e., a) and the polymeric matrix which is in a form selected from a coating or part of a stent or catheter, or vascular graft or other prostetic devices (i.e., b). Example 1 (p.22) is he closest reference to the amount of DNA dispersed throughout the microparticles (i.e., micropheres). Between 20 μg and 40 μg of plasmid DNA was encapsulated into micropheres of 1 ml vials. The specification does not disclose any other use of 20 μg of plasmid DNA associated with other delivery systems (e.g., stent or catheter, or vascular graft). Thus the limitation of new claims 18 is considered new matter.

New claim 17 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a new matter rejection.

New claim 17 recite the limitation " the polymeric matrix is formed after implantation into the mammalian subject". This limitation does not appear to have written support from the as-filed specification. The closest reference as to the way of polymerizing the monomers and DNA into a polymer with UV light is on page 13, lines 17-18. Further, the specification recites that "the polymerization can be carried out *in vitro* as well as *in vivo*" (line 19-20). It is unclear how the polymer could be produced with UV light *in* vivo without damaging DNA in the subject, moreover the as-filed specification has not reference to any formation of polymeric matrix after implantation. Thus the limitation of new claims 17 is considered new matter.

Claim Rejections - 35 USC § 102e

The following is a quotation of the appropriated paragraphs of 35 U.S.C. 102 that forms the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless:

> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraph (1), (2) and (4) of section371© of this title before the I invention thereof by the applicant for patent.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 3-7, 9-13 and 15-17 are rejected under 435 U.S.C. 102(e) as being anticipated by Grinstaff et al., (US Patent No. 5,639,473, effective filing date Feb. 22, 1994).

The present invention is drawn to a composition or device for *in vivo* delivery of any effective amount of naked DNA into a mammalian subject. The drug delivery devices comprise of a polymeric matrix, which can be biodegradable or non-degradable. Additionally the naked DNA is dispersed within the polymeric matrix so when the device is implanted *in vivo,* the DNA is either release by degradation of the matrix, in the case of a biodegradable polymer, or diffuses form the matrix, in the case of a non-degradable polymer. In this way, the DNA comes in contact with cells, is up taken by and is expressed in those cells. The drug delivery devices allow for a slow released of the naked DNA for the period of at least three months.

Grinstaff et al., teach a preparation comprising naked DNA molecules (having at least 30 nucleotide residues, claim 16) complexed with synthetic, biocompatible polymeric microparticles (claim 26, claim 1, claim 9), wherein polymeric microparticles have a preferred size in range between 1 and 5 μm (column 10). Example 13 (columns 39-40) discloses that by complexing the disclosed polymeric shell with a naked DNA, gene delivery (e.g., release) of naked DNA to targeted cells is enhanced. In addition, genes encoded by a DNA contained in a plasmid, can be incorporated into a polymeric microcapsules shelf to express the protein of interest (Example 13, column 40, paragraphs 3 and 6), which requires expression of non-coding regions for gene expression. Biodegradable polymeric microparticles are disclosed at column 9, paragraph 2, including synthetic polymers, and nonadhesive polymers (column 12, bridging 13). Incorporation of PEG into the walls of the polymer prolongs and maintains higher blood levels of the bioactive agent (column 13, paragraph 1, column 37, example 10). Column 9 also discloses that the polymeric microparticles can be dissolved in an organic solvent. Column 12 further discloses that the polymeric microparticles are complexed with a non-biodegradable polymers. Contrast agents can be entrapped in the polymeric shell and introduced into the body space in various ways (e.g., syringes), (column 30 bridging column 31). Thus, Grinstaff teaches all the claimed limitations and Anticipates Applicant's claimed invention.

Claims 3-7, 9-13 and 15-17 are rejected under 435 U.S.C. 102(e) as being anticipated by Bonadio et al., (US Patent No. 5,763,416, filing date 02-18-1994).

The present invention is drawn to a composition or device for *in vivo* delivery (e.g., release) of any effective amount of naked DNA into a mammalian subject. The drug delivery

devices comprise of a polymeric matrix, which can be biodegradable or non-degradable. Additionally the naked DNA is dispersed within the polymeric matrix so when the device is implanted *in vivo,* the DNA is either release by degradation of the matrix, in the case of a biodegradable polymer, or diffuses form the matrix, in the case of a non-degradable polymer. In this way, the DNA comes in contact with cells, is up taken by and is expressed in those cells. The drug delivery devices allow for a slow released of the naked DNA for the period of at least three months.

Bonadio et al., teach that the polymeric microparticle entrapping the nucleic acid constructs can be used to enhance the delivery (e.g., release) and expression of DNA constructs *in vivo and/or ex vivo, in vitro*. DNA molecules (having at least 30 nucleotide residues) encoding bioactive agents (growth factors and hormones) are disclosed at columns 2 and 3. Bonadio et al., further teach that nucleic acids as bioactive agents may be in any form, including plasmid, genomes of various recombinant viruses. Activation of genes may be promoted (e.g., inducible expression constructs) to express a desired gene product (column 4, column 10, paragraph 4). The gene-activated preparation of Bonadio comprises a biocompatible polymeric matrix (column 11, bridging column 12), and is employed in wound healing and related tissue repair (column 12, lines 50-60). Columns 11 and 22 specifically disclose biodegradable and non-biodegradable polymeric matrices (also in claims 61, 65, and 71). Matrices may be of any shape or size to preferably fit a bone fracture (column 13, paragraph 2, claims 46-49).

With respect to the DNA concentration employed in the preparation of microparticles, Bonadio et al., teach that as long as the preparation of microparticles are soaked in a DNA solution containing g 0.5-1 mg (500 μg-1000 μg)/ml, improved gene transfer of the DNA to

target cells at a tissue site would be achieved (column 29, Example II). Thus, Bonadio teaches all the claimed limitations and Anticipates Applicant's claimed invention.

Claims 3-7, 9-13 and 15-17 are rejected under 435 U.S.C. 102(e) as being anticipated by Tice et al., (US Patent No. 5,820,883 filing date June 6, 1995).

The present invention is drawn to a composition or device for *in vivo* delivery of any effective amount of naked DNA into a mammalian subject. The drug delivery devices comprise of a polymeric matrix, which can be biodegradable or non-degradable. Additionally the naked DNA is dispersed within the polymeric matrix so when the device is implanted *in vivo,* the DNA is either release by degradation of the matrix, in the case of a biodegradable polymer, or diffuses form the matrix, in the case of a non-degradable polymer. In this way, the DNA comes in contact with cells, is up taken by and is expressed in those cells. The drug delivery devices allow for a slow released of the naked DNA for the period of at least three months.

Tice et al., teach a method of employing a biocompatible polymeric matrix including preferably a biodegradable polymer (e.g. wherein said first and said second biocompatible excipients are independently a poly(lactide-co-glycolide), polylactide), poly(glycolide), copolyoxalate, polycaprolactone, poly(lactide-co-caprolactone), poly(esteramide), polyorthoester, poly(β-hydroxybutyric acid), polyanhydride, or a mixture thereof, claim 41) for the controlled release of the DNA (entire document, and claim 29), to target cells so as to induce an immune response through pulsatile releases of the bioactive agent all from a single administration of microcapsulated bioactive agent, e.g., antigen. More specifically, Tice et al., teach that the biocompatible polymer when employed as a polymeric matrix delivery system

protects the inoculated antigen form degradation thereby stimulating the mucosal immune response (column 3, lines 1-28). Further, microencapsulation of bioactive antigen including nucleic acid molecule results in a profoundly heightened immune response to the incorporated antigen or vaccine in numerous experimental systems (column 14, lines 15-18). Microparticles including poly(D,L-lactide) and poly(glycolic) acid may range in size from 0.1 to 500 μm, and the particle can be loaded with from 0.01 to 75 wt% of the DNA (column 3). Thus, Tice teaches all the claimed limitations and Anticipates Applicant's claimed invention.

Claim Rejections - 35 USC § 103

Claims 3-7, 9-13 and 15-17 are rejected under 435 U.S.C. 103(a) as being unpatentable over Ledley et al., (US Patent No. 5,770,580, filing date May 30, 1995) in view of Bonadio et al., or Grinstaff et al.

Ledley et al., teach a method for gene delivery (e.g., release) and transient gene expression comprising the steps of administering formulated DNA expression vectors to cells associated with fluid spaces *in vivo* under conditions in which cells associated with the fluid space incorporate the formulated DNA expression vector (abstract, and claim1). Ledley et al., disclose that the method has been able to achieve significant levels of expression by directly injecting formulated DNA vectors into cells associated with fluid spaces (e.g., joints, thyroid, ear and eye) and express recombinant genes at levels comparable to levels seen in muscle (column 6, lines 13-16). Ledley et al., further teach that the method allows use of genes as medicines that can be administered intermittently in response to acute disease or over the long term to establish

steady state levels of a therapeutic gene product, and thus, genes can be used in clinical practice (column 6, lines 35-41). Ledley et al., disclose *in vivo* cells and tissues affected by the gene transfer method, e.g., synovial cells, chondrocytes , extracellular matrix or cartilage, bone, periosteum of bone, inflammatory cells resulting from inflammatory processes, lymphocytes, mast cells, monocytes, eosinophils, fibroblasts (column 7, lines 40-55), and cells associated with enhancement of repair, regeneration, and recovery of essential structures of the joint (column 16, last paragraph). More specifically, Ledley teaches that the formulated DNA expression vectors with formulated elements include gels, slow release matrices which enhance the delivery, uptake, stability, and expression of genetic material into cells. Genes employed in the method of Ledley include genes encoding collagens, extracellular matrix proteins, IL-1, IL-4, growth factors, enzymes for synthesis and secretion of synovial fluid, hormones, receptors and cytokines (paragraph bridging column 9 and 10).

Ledley do not teach specifically that synthetic, biocompatible degradable or non-degradable polymers can be employed as the formulated element.

However, at the time the invention was made, either Bonadio or Grindstaff describe that it is known in the art that synthetic, biocompatible degradable or non-degradable polymers can be employed as carries to prolong the release and expression of naked DNA *in vitro* and/or *in vivo*. It would have been obvious for one of ordinary skill in the art to have employed the disclosed synthetic, biocompatible polymatrix matrices exemplified in the Bonadio and Grindstaff references as carrier to deliver and express naked DNA constructs. Additionally, it would have been obvious that higher amount of DNA loaded into the polymatrix matrices will lead to continue higher released amount of DNA form the polymers in a targeted cell *in vitro*

and/or *in vivo* with a reasonable expectation of success, particularly since both Bonadio and Grindstaff demonstrate that synthetic, biocompatible polymeric carriers do enhance the bioavaibility and expression of a naked DNA construct in a targeted cell. Thus the claimed invention was *prima facie* obvious at the time the invention was made.

Claim Rejections

Rejection, Obviousness Type Double Patenting-No secondary Refence(s)

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 3-18 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 2 of U. S. Patent No. 6,620,617, filing date March 23, 2001. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1-2 of the '617 patent and claims 3-18 of this instant application are all encompass of a method of delivering a naked DNA in a composition comprising,

> (a) a preparation of microparticles between 1 and 300 μm in diameter, each of which preparation of microparticles comprises a synthetic, biocompatible, biodegradable

polymeric matrix; and

(b) an effective amount of naked DNA dispersed within the preparation of microparticles, wherein said amount of naked DNA is greater than 20 μg, in which the DNA contains a gene operably linked to a promoter, the nucleotide sequence of said gene being greater than thirty nucleotides in length;

wherein said DNA is released or diffused from said matrix over a period of at least three months.

Because claims 3-18 are drawn broadly to any method of delivering a naked DNA in a composition, thus claims 3-18 of the instant application embrace the invention as set forth and claimed in the '617 patent. Hence the method of delivering a naked DNA in a composition comprising naked DNA as claimed in the '617 patent and this instant application are obvious variants of one another.

Rejection, Obviousness Type Double Patenting-No secondary Refence(s)

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 3-18 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-8 of U. S. Patent No. 6,475,779, filing date Oct.

15, 1998. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1-8 of the '779 patent and claims 3-18 of this instant application are all encompass a preparation of microparticles, each of which preparation of microparticles comprise a synthetic polymeric matrix and an effective amount of naked DNA dispersed within the preparation of microparticles, the polymeric matrix being dissolvable in a volatile organic solvent, wherein

(a) the size of the microparticles is between 1 and 300 μm in diameter; and

(b) the effective amount of naked DNA dispersed within the preparation of microparticles is greater than 20 μm and wherein the DNA contains a gene operably linked to a promoter, the nucleotide sequence of said gene being greater than 30 nucleotides in length, said naked DNA comprising circular nucleic acid molecules, supercoiled nucleic acid molecules, or a combination of both.

Because claims 3-18 are drawn broadly to any preparation of microparticles, each of which preparation of microparticles comprise a synthetic polymeric matrix and an effective amount of naked DNA dispersed within the preparation of microparticles, thus claims 3-18 of the instant application embrace the invention as set forth and claimed in the '779 patent. Hence the any preparation of microparticles, each of which preparation of microparticles comprise a synthetic polymeric matrix and an effective amount of naked DNA dispersed within the preparation of microparticles as claimed in the '779 patent and this instant application are obvious variants of one another.

Rejection, Obviousness Type Double Patenting-No secondary Refence(s)

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 3-18 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-14 of U. S. Patent No. 6,262,034, filing date Nov. 25, 1997. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1-14 of the '034 patent and claims 3-18 of this instant application are all encompass of a method of delivering naked DNA to a tissue site of a mammalian subject, said method comprising implanting directly, into said tissue site in said subject, a composition comprising:

(a) a preparation of microparticles between 1 and 300 μm in diameter, each of which preparation of microparticles comprises a synthetic, biocompatible, non-biodegradable polymeric matrix; and

(b) an effective amount of naked DNA contained within said matrix, wherein said amount of naked DNA is greater than 20 μg and wherein the DNA contains a gene operably linked to a promoter, the nucleotide sequence of said gene being greater than thirty nucleotides in length;

wherein said DNA is released or diffused from said matrix after implantation over a period of at least three months.

Because claims 3-18 are drawn broadly to any method of delivering naked DNA to a tissue site of a mammalian subject, thus claims 3-18 of the instant application embrace the invention as set forth and claimed in the '034 patent. Hence the method of delivering naked DNA to a tissue site of a mammalian as claimed in the '034 patent and this instant application are obvious variants of one another.

Conclusion

No claim is allowed.

Cross-Reference to Related Application. The disclosure is objected to because there is not cross-reference to related application on the first page of the specification as a CON of Application No. 09/815,807 03/23/2001, now U. S. Patent No. PAT 6,620,617, which is a CON of 08/978,522 11/25/1997 PAT 6,262,034, which is a DIV of 08/467,811 06/06/1995 ABN, which is a DIV of 08/213,668 03/15/1994 ABN

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maria Leavitt whose telephone number is 571-272-1085. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nguyen Dave can be reached on 571-272-0731. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Maria Leavitt, PhD
Patent Examiner P/1633
Remsen 3A64
Phone: 571-272-1085
Email: maria.leavitt@uspto.gov

DAVE TRONG NGUYEN
SUPERVISORY PATENT EXAMINER